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## PATENT SPECIFICATION

DRAWINGS ATTACHED

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### COMPLETE SPECIFICATION

#### Improvements in or relating to the Manufacture of Mouthpiece Cigarettes

We, DESMOND WALTER MOLINS and TOM ROWLANDS, both British Subjects, and THE MOLINS ORGANISATION LIMITED (formerly known as MOLINS MACHINE COMPANY LIMITED), a British Company, all of 2, Evelyn Street, Deptford, London, S.E.8., do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention concerns improvements in or relating to the manufacture of mouthpiece cigarettes.

It is common practice, in making mouthpiece cigarettes, to arrange a double-length mouthpiece portion between and in axial alignment with two cigarette lengths, and to unite these three parts by wrapping and securing an adhesive uniting band around the mouthpiece portion and around parts of the adjacent ends of the two cigarette lengths, the assemblage so formed then being subdivided by cutting midway through the mouthpiece portion to provide two mouthpiece cigarettes. In each of these mouthpiece cigarettes, the whole cylindrical surface of the mouthpiece portion is thus covered by the uniting band.

The expression "mouthpiece portion" where used herein is to be understood as meaning any cylindrical element suitable for forming the mouthpiece end of a cigarette—such for example as a portion of filtering material, or a hollow tube, or a combination of both.

According to the present invention there is provided in the manufacture of mouthpiece cigarettes in which cigarettes are joined to mouthpiece portions by encircling uniting bands, a method which includes the steps

of feeding a single web of uniting material, slitting the moving web continuously longitudinally into two relatively narrow webs, separating the two webs sideways of each other, applying adhesive to the two webs, cutting equal portions from the webs to provide pairs of uniting bands, and wrapping each uniting band of a pair about an end portion only of a mouthpiece portion and about an end of a cigarette adjoining said end portion.

Further according to the invention there is provided in the manufacture of mouthpiece cigarettes by uniting a double length mouthpiece portion to two cigarette lengths and then cutting through the mouthpiece portion to provide two mouthpiece cigarettes, a method which includes the steps of feeding a single web of uniting material, slitting the moving web continuously longitudinally into two relatively narrow webs, separating the two webs sideways of each other, applying adhesive to the two webs, cutting equal portions from the webs to provide pairs of uniting bands, and wrapping the said uniting bands simultaneously about the opposite end portions only of a double-length mouthpiece portion and the end portions of two cigarettes adjoining said opposite end portions. The method may further include the step of printing any desired matter on the uniting material before it is applied to the mouthpiece portions and cigarette lengths, e.g. by printing on the single web of uniting material before it has been slit into two webs. If this is done, printing of the cigarette-paper web can be dispensed with.

Further according to the invention there is provided apparatus for making mouthpiece cigarettes, comprising means to feed successive groups each consisting of a double-length

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mouthpiece portion between and axially aligned with two cigarette lengths, means to apply successive pairs of narrow adhesive uniting bands to successive groups so that each band is wrapped around an end portion only of the double-length mouthpiece portion of a group and around the adjacent end portion of a cigarette length.

The apparatus may include means to feed a single web of uniting material, cutting means to slit the moving web continuously longitudinally into two relatively narrow webs, means to separate the two webs sideways of each other, means to apply adhesive to the two webs, means to cut equal portions from the two webs to provide pairs of uniting bands, and means to wrap the uniting bands of each such pair about opposite end portions only of a double-length mouthpiece portion of a group and about the end portions of the two cigarette lengths adjoining the said opposite end portions. A printing device may also be provided to print the uniting material before it is applied to the groups, e.g. it may be positioned to print the single web of uniting material before the latter has been slit into two narrow webs.

Apparatus in accordance with the invention will now be described by way of example with reference to the drawings accompanying the Provisional Specification in which:—

Figure 1 is a diagrammatic end elevation, Figure 2 is a plan to an enlarged scale, of part of Figure 1, looking in the direction of the arrow A, and

Figures 3, 4 and 5 diagrammatically illustrate the steps in making mouthpiece cigarettes.

As shown in Figure 1, a web 4 of uniting material, which may be of paper or any other suitable material, is unwound from a bobbin 5 and passes about a roller 6 which has a central peripheral groove 7 to accommodate the edge of a rotating disc knife 8. The knife 8 slits the web longitudinally into two relatively narrow webs 8a and 8b, see Figure 2. These two webs are threaded through guides 9 and 10 which diverge in the direction of movement of the webs as shown in Figure 2 and thus separate the two webs sideways from each other. The webs so separated pass over a further roller 11 which cooperates with an opposed roller 12. These two rollers grip the webs between them and one of the rollers is driven so that the webs are fed forward positively at a controlled speed, and the undivided web 4 is drawn from the bobbin 5.

The two webs pass from the rollers 11 and 12 to and about an arcuate guide element 13, from which they pass to a suction drum 14, which has suction apertures on its peripheral surface, communicating with a suction chamber or chambers within the drum, and suitably disposed and grouped

to cause the two webs to be held to the drum.

The drum 14 rotates with a peripheral speed in excess of the linear speed at which the webs 8a and 8b are fed by the rollers 11 and 12, and the drum surface therefore slips beneath the webs while urging them forward.

A rotating cutting device 114 has cutting blades 15 which engage and sever the two webs at suitable intervals to produce pairs of uniting bands. These are carried forwardly by the drum at the peripheral speed of the drum and are thus spaced apart from the webs.

An adhesive-applying device 16, having an adhesive-applying wheel 17, a doctor wheel 18, and a gum-pot 19, applies adhesive to those sides of the webs which will be exposed when the webs are on the surface of the drum 14. This adhesive-applying device as illustrated is similar to that disclosed in the complete specification and drawings of British Patent Application No. 38166/60 (Serial No. 919,740), but any other suitable device could be used.

Beneath the drum 14 is a fixed arcuate plate 20 which cooperates with the drum surface to form a rolling passage in which uniting bands carried by suction on the drum surface are rolled around cigarette-mouthpiece groups while the latter are rolled through the passage by engagement of their cylindrical surfaces by the drum 14 and plate 20. Such a group 21 is shown in Figure 1 as it is about to be engaged by a pusher 22 and pushed into the passage. At that stage it is as shown in Figure 3, consisting of a double-length mouthpiece M between and in axial alignment with two cigarette lengths C.

When the group is pushed into the passage and starts to roll, it is overtaken and engaged by a pair of uniting bands B, Figure 4, which have been cut from the webs 8a, 8b. These bands are suitably spaced apart sideways on the drum 14 to engage the cigarette-mouthpiece group at the junctions of the mouthpiece portion and the cigarette lengths abutting it, with sufficient overlap to secure the parts together as shown in Figure 4. The united group is then subdivided by cutting midway through the mouthpiece portion M to produce two mouthpiece cigarettes, one of which is shown in Figure 5.

It can be seen from Figure 4 that the combined width of the two uniting bands B is very much less than would be the width of a single uniting band covering the whole of the mouthpiece portion, in the usual manner. This results in considerable economy in material, particularly when long mouthpiece portions are used, as is the tendency at the present time.

If desired, the bands can be provided with

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printed matter such as is normally printed on the cigarette-paper wrapper of a cigarette. For this purpose a printing device may be provided, preferably at a position to operate on the single web 4 as shown in Figure 1, which illustrates a printing device in which ink supplied from a duct 23 by an ink roller 24 is transferred by a transfer roller 25 to a printing roller 26 engaging the web.

10 WHAT WE CLAIM IS:—

1. In the manufacture of mouthpiece cigarettes in which cigarettes are joined to mouthpiece portions by encircling uniting bands, a method which includes the steps of feeding a single web of uniting material, slitting the moving web continuously longitudinally into two relatively narrow webs, separating the two webs sideways of each other, applying adhesive to the two webs, cutting equal portions from the webs to provide pairs of uniting bands, and wrapping each uniting band of a pair about an end portion only of a mouthpiece portion and about an end of a cigarette adjoining said end portion.
2. In the manufacture of mouthpiece cigarettes by uniting a double-length mouthpiece portion to two cigarette lengths and then cutting midway through the mouthpiece portion to provide two mouthpiece cigarettes, a method which includes the steps of feeding a single web of uniting material, slitting the moving web continuously longitudinally into two relatively narrow webs, separating the two webs sideways of each other, applying adhesive to the two webs, cutting equal portions from the webs to provide pairs of uniting bands, and wrapping the said uniting bands simultaneously about the opposite end portions only of a double-length mouthpiece portion and the end portions of two cigarettes adjoining said opposite end portions.
3. A method as claimed in Claim 2, including the step of printing any desired matter on the uniting material before it is

applied to the mouthpiece portions and cigarette lengths.

4. A method as claimed in Claim 3, wherein the said printed matter is printed on the single web of uniting material before it has been slit into two webs.

5. Apparatus for making mouthpiece cigarettes, comprising means to feed successive groups each consisting of a double-length mouthpiece portion between and axially aligned with two cigarette lengths, means to feed a single web of uniting material, cutting means to slit the moving web continuously longitudinally into two relatively narrow webs, means to separate the two webs sideways of each other, means to apply adhesive to the two webs, means to cut equal portions from the two webs to provide pairs of uniting bands, and means to wrap the uniting bands of each such pair about opposite end portions only of a double-length mouthpiece portion of a group and about the end portions of the two cigarette lengths adjoining the said opposite end portions.

6. Apparatus as claimed in Claim 5, including a printing device arranged to print the uniting material before it is applied to the groups.

7. Apparatus as claimed in Claim 6, wherein the printing device is positioned to print the said single web of uniting material before it has been slit into two webs.

8. A method of making mouthpiece cigarettes, substantially as described herein with reference to the drawings accompanying the provisional specification.

9. Apparatus for making mouthpiece cigarettes, constructed, arranged and adapted to operate substantially as described herein, with reference to the drawings accompanying the provisional specification.

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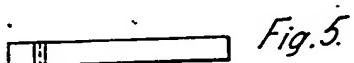
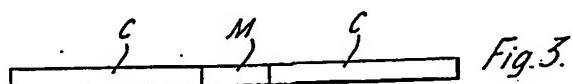
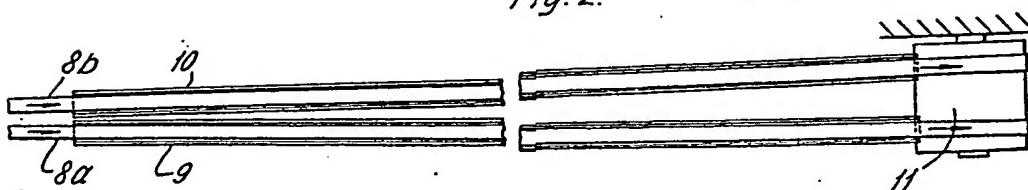
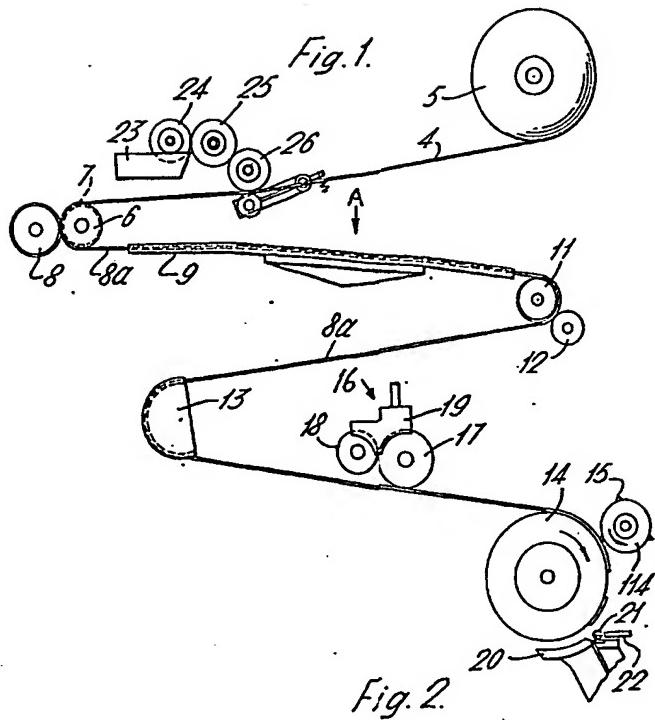
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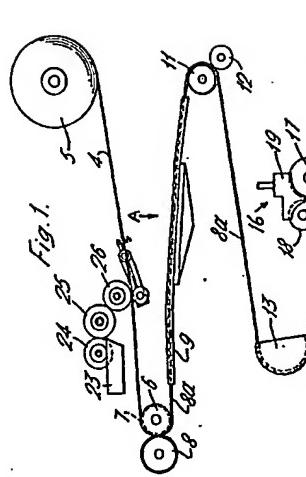


Fig. 1.

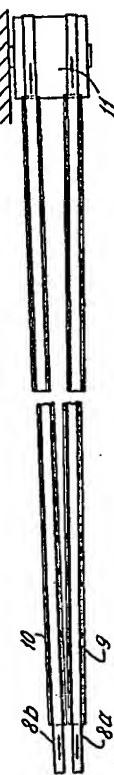


Fig. 2.



Fig. 3.



Fig. A.



Fig. 5.